

CELEBRATING PUBLIC WORKS



Public Works Works for You!

You might ask "What is public works?" Public works is services provided to the public, used by the public, and usually paid for by their tax dollars.



Public works can be found all around you. It is transportation (how people travel), construction (how public facilities are built), water and wastewater (how water is cleaned and goes through pipes), and more. You might have seen or used public works projects without knowing who did the work.



Remember, it's because of public works that your community is a better, safer place to live, work, and play. Look at these pictures—are any of these services familiar to you?



What is National Public Works Week?

Are you ready for National Public Works Week? We are! In fact, we are so excited; we want you to celebrate with us.

National Public Works Week (NPWW) began in 1960. It is celebrated the third full week of May, which this year is May 17–23, 2015, in cities all over North America! What is it that we celebrate? The men and women of public works, of course! NPWW is when we think of all of the great things that the people of public works do. Why do they do them? To make your community a better place to live, work, and play. 🐾



This year's National Public Works Week poster was created by Christiane Beauregard. This year's theme "Community Begins Here" speaks to the essential nature of public works services in support of everyday quality of life.

10 Ways to Celebrate National Public Works Week

- 1 Start a recycling program at school.
- 2 Plant a tree (see page 5).
- 3 Ask a teacher or parent to arrange a tour of a public works facility.
- 4 Draw a picture of your favorite public works truck or tractor (see page 6).
- 5 Pick up litter in a public park and around your neighborhood.
- 6 Write an essay on public works and publish it on social media.
- 7 Create an emergency kit (see page 6).
- 8 Check your home for leaky faucets or running toilets.
- 9 Create a photo essay on how public works serves your community.
- 10 Thank a public works employee for his or her hard work! 🐾

In the Spotlight!

Meet P.W. Paws and Chipper. They are special friends of the American Public Works Association.

P.W. Paws knows a lot about public works. He is the official mascot of the American Public Works Association. He is very smart. His favorite color is orange. And he can be found in many places working for public works. You might even spot him as his favorite superhero character—ready to take on the bad guys!

P.W. likes to share what he knows about public works with others, especially students. You never know when you might find him out and about, making classroom visits!

Chipper belongs to the Keystone family. Mr. Keystone is a Public Works Director. Chipper has learned a lot about public works just by being the family dog. He loves to play, go for walks, and the occasional adventure exploring different aspects of public works. His favorite people are his young owners, Ben and Madison. They take great care of him. 🐾



The Interstate Highway System

Where did those red, white, and blue signs come from?

In 1919, a young lieutenant colonel named Dwight Eisenhower traveled with an army truck convoy across America. It took them two months to complete the journey. They traveled over dirt roads, mountain trails, and crumbling bridges. Years later, Eisenhower became the Supreme Allied Commander during World War II. In Germany, he saw how the Autobahn network of roadways was more efficient. When Eisenhower became president, he signed the Federal-Aid Highway Act of 1956—the beginning of our Interstate Highway System.

The Interstate Highway system is believed to be the largest public works project in American history. It is more than 46,870 miles long and cost approximately 129 billion dollars. The US government set the guidelines, but each state was responsible for their own location, ownership, and maintenance of their sections of the roadway. The federal government paid for 90 percent of the cost with a new gasoline tax.

Thanks to public works, we can now travel across the country in a couple of days rather than a couple of months!



Army convoy crossed America in 56 days to prove we needed better roads.



Number of Digits



Primary Routes are two digit numbers.

Auxiliary Routes are three digit numbers.



The **second two numbers** relate to the Primary Route to which the Auxiliary Route connects.

The **first number** indicates which kind of Auxiliary Route it is.



When the first digit is even, it indicates a **loop or bypass**. These routes start and end at their primary route.

When the first digit is odd, it indicates a **spur**. These routes start at a primary route but don't end at one.

Did you know...

- The official name was the "National System of Interstate and Defense Highways." But in 1990, President Bush signed a bill changing the name to the "Dwight D. Eisenhower System of Interstate and Defense Highways."
- East and West routes are even numbers. North and South routes are odd numbers.
- Missouri was awarded the first contract to upgrade sections of the famous Route 66 to what is now Interstate 44.
- Alaska is the only state without interstate highways. However, Hawaii has three—H-1, H-2, and H-3.
- New York has the largest number of interstate routes—29.
- I-90 is the longest interstate route. It runs from Seattle, Washington to Boston, Massachusetts—more than 3,000 miles long.



Public Works Across the Globe

Cycling on solar panels?

In 2014 the first solar roadway opened in The Netherlands. The Dutch love their cycling and they made that mode of transportation even greener by creating a solar bike path. Special solar panels were added to half of the bike path to collect solar energy during the day. That energy can then be used to power streetlights, traffic lights, and maybe electric cars one day.

The solar panels are protected from bike tires by a thick layer of tempered glass. The glass even has a rough texture so cyclists won't skid on the slippery surface. Although the roadway is a success, it was very expensive. It cost approximately 3.7 million dollars and is only expected to run 328 feet. However, as technology advances, costs are expected to go down. And think of how much energy can be created if all roads collected solar energy during the day.

The bike path may be the first but it's not the only one. In another part of the country, innovator Daan Roosegaarde created a more artistic solar bike path. This path not only stores energy during the day but also releases it at night. Cyclists can now safely travel a path lit by solar-powered LEDs. The glowing result is a tribute to Vincent Van Gogh's famous painting, *The Starry Night*.

Back at home, companies in the US are also researching the possibility of solar roadways. The innovative roads could include, solar panels, LEDs, and even heating elements. Imagine the help to public works if streets could melt their own ice!



Cycling on solar bike path.



Close-up of solar panel in road



Roosegaarde's Starry Night bike path at night



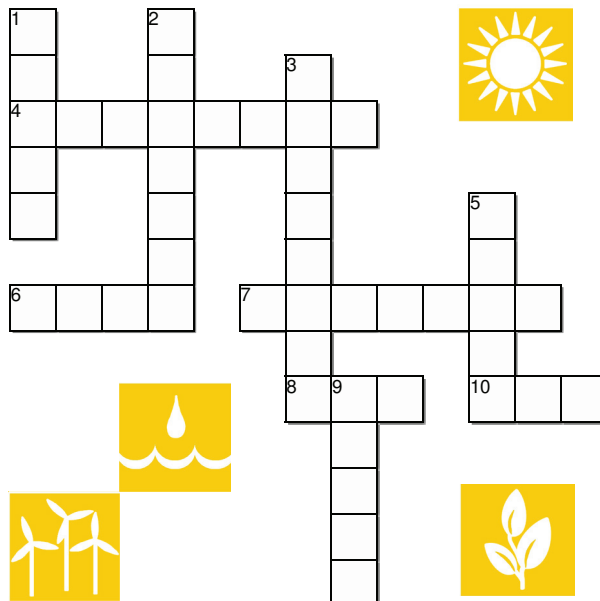
Van Gogh's The Starry Night

Alternative Energy Crossword Puzzle

There are all kinds of ways to create and collect alternative energy. Test your knowledge with the crossword puzzle below.

Across

4. These cars don't use gasoline and have to be recharged.
6. Tidal energy generators use the same thing surfers use.
7. Hydroelectric power uses moving water to create energy. This famously huge waterfall borders the US and Canada.
8. This energy efficient light is short for: Light Emitting Diode.
10. Solar panels collect energy from this.



Down

1. Color most used when talking about alternative energy.
2. Two wheel vehicle you can use to "go green" right now.
3. Spinning machines that collect energy from the wind (another word for turbine).
5. Large collections of solar panels have the same name of places that house cattle and other livestock.
9. Geothermal energy collects energy from the heat deep beneath the surface of the...

Plant a Tree

They're not just for the birds!

On May 22nd, 2011, an EF-5 tornado roared through 13 miles of southwest Missouri. 161 people died, 1,000 people were injured, and the community suffered 2.8 billion dollars in property damage. Also, 15,000 to 20,000 trees were destroyed. After a major storm, public works employees are busy with rescue, cleanup, and rebuilding. However, after recovering from such a disaster, replacing the trees became a priority.

The lack of shade in the following hot summer months made the community need trees more than ever. The cities of Joplin and Duquesne, the Missouri Department of Conservation, and many private donors stepped in. Arborists, (experts in tree care) and chainsaw operators helped with the removal of lost trees and the rescue of those that could be saved. Programs were soon established to reforest the entire community.

In two years' time, more than 12,200 trees have been donated and planted. Citizens were even taught how to properly plant and care for them. With the help of public works, community forestry is now part of the equation when it comes to infrastructure reconstruction after a major disaster.

In other places, trees actually save money. In Ann Arbor, Michigan they provide more than half a million dollars a year in stormwater benefits. The trees intercept 65 million gallons of water that would otherwise pollute lakes, streams, and reservoirs. In Washington D.C., trees reduced stormwater storage costs by approximately 4.7 billion dollars. In Kansas City, trees not only reduce stormwater runoff, but also provide an air pollution removal value of nearly 300 million dollars.

Who knew trees did so much to help the community? Just like public works, trees work hard to clean the air, water, and beautify the world around us!

This three-photo combo shows a scene taken on May 23, 2011, top, July 21, 2011, center; and May 7, 2012, bottom, shows progress made in Joplin, Mo. in the year after an EF-5 tornado destroyed a large swath of the city.

—AP Photo/Charlie Riedel

EF RATING WIND SPEEDS

| EF-0 | EF-1 | EF-2 | EF-3 | EF-4 | EF-5 |
|-----------|------------|-------------|-------------|-------------|----------|
| 65-85 mph | 86-110 mph | 111-135 mph | 136-165 mph | 166-200 mph | >200 mph |



Tree Planting Tips

- Choose a tree that's indigenous to your area. That means it grows naturally where you live.
- Dig the hole three times the width of the tree's root ball or pot. However, be sure it's the same depth as the root ball is tall.
- Separate and spread out the roots at the bottom of the root ball.
- Find out what fertilizer, mulch, and/or soil is best for your tree.
- Stake your tree by loosely tying it to surrounding stakes to keep the wind from blowing it over.
- Water thoroughly and keep watering weekly—depending on the type of tree.



Whole Storm in Half a City

Public works is ready when disaster strikes

In 2014, residents in western New York state were hit with more than six feet of snow the week before Thanksgiving. In the city of Buffalo, half of the city was crippled by snow while the other half received the normal amount of snow for the season.

Buffalo's public works is a big department that includes water, parks, engineering, road maintenance, and more. They have 72 pieces of equipment to battle winter storms. But when this storm hit, every department had something to contribute. The parks department had small bulldozers that could clear sidewalks. Engineering had pickups that could be used to clear parking lots.

Buffalo residents helped by staying off the roads. A driving ban was put in place so plows and salt trucks could take care of the roads. This also cleared the way for emergency vehicles and so emergency service employees such as police officers, firefighters, doctors, and nurses could get to work.

Like many public works, the city of Buffalo had a winter storm plan in place. The winter equipment is prepped well ahead of time. There are several meetings with department heads and emergency services throughout the year. This way everyone can work together when disaster strikes.



P.W. Paws says, "Be prepared! Make an emergency kit!"



No matter where you live, an emergency could happen. So, you should have a family emergency kit ready. Ask your parents to help you pack one! It should include:

- A flashlight and spare batteries
- A battery operated radio
- Food and snacks for several days
- Bottled water (three gallons for each person)
- Blankets
- A first aid kit
- A change of clothes for each person in your family
- List of emergency phone numbers—police, water department, gas company, etc.
- A form of identification for each family member
- Games, toys, or stuffed animals for kids

Which One of These Does Not Belong?

Public works uses all kinds of equipment to help before and after winter storms. Some are pictured below. Can you find which ones don't belong in this group?



SALT SPREADER

spreads salt onto roads to help melt ice and snow



SNOW PLOW

moves snow off the roadway with a large blade



PAVER

used to lay asphalt on roads and bridges



CHIPPER

used to shred downed branches after storms



STREET SWEEPER

sweeps and vacuums litter from roadways



CHERRY PICKER

elevated work platform to help clear branches or repair power lines

Public Works and iPads

Saving money, time, and trees by going digital!

In **Horry County, South Carolina**, a handful of iPads were purchased for the county council. This way they wouldn't have to print out meeting agendas. These documents were sometimes hundreds of pages long, and 25 to 30 copies had to be printed every two weeks. Putting everything on iPads saved a lot of printing time, not to mention paper. And that saves a lot of trees!

Over the past few years, more than 450 iPads have been handed out to employees in the fire and police departments, building inspectors, stormwater management employees, and others. Not only has this done away with tons of paper documents, it's also connected workers to a vast network where they can access forms, permits, records, maps, and even 911 calls while out in the field.

Carson City, Nevada is using iPads and smart phones to create a "smart city." Special software is used to remotely monitor and manage services across three counties. The system controls many city services including: water and wastewater, service truck fleets, landfill processes, traffic control, and renewable energy production.

Carson City's virtual control and monitoring system is a success and has lowered overhead costs. There has been a 15% reduction in work hours. The workweek was reduced from five 8-hour days to four 10-hour days.

The public works department of **Minneapolis, Minnesota**, saved a quarter of a million dollars by using iPads to inventory the city's 15,000 pedestrian curb ramps.

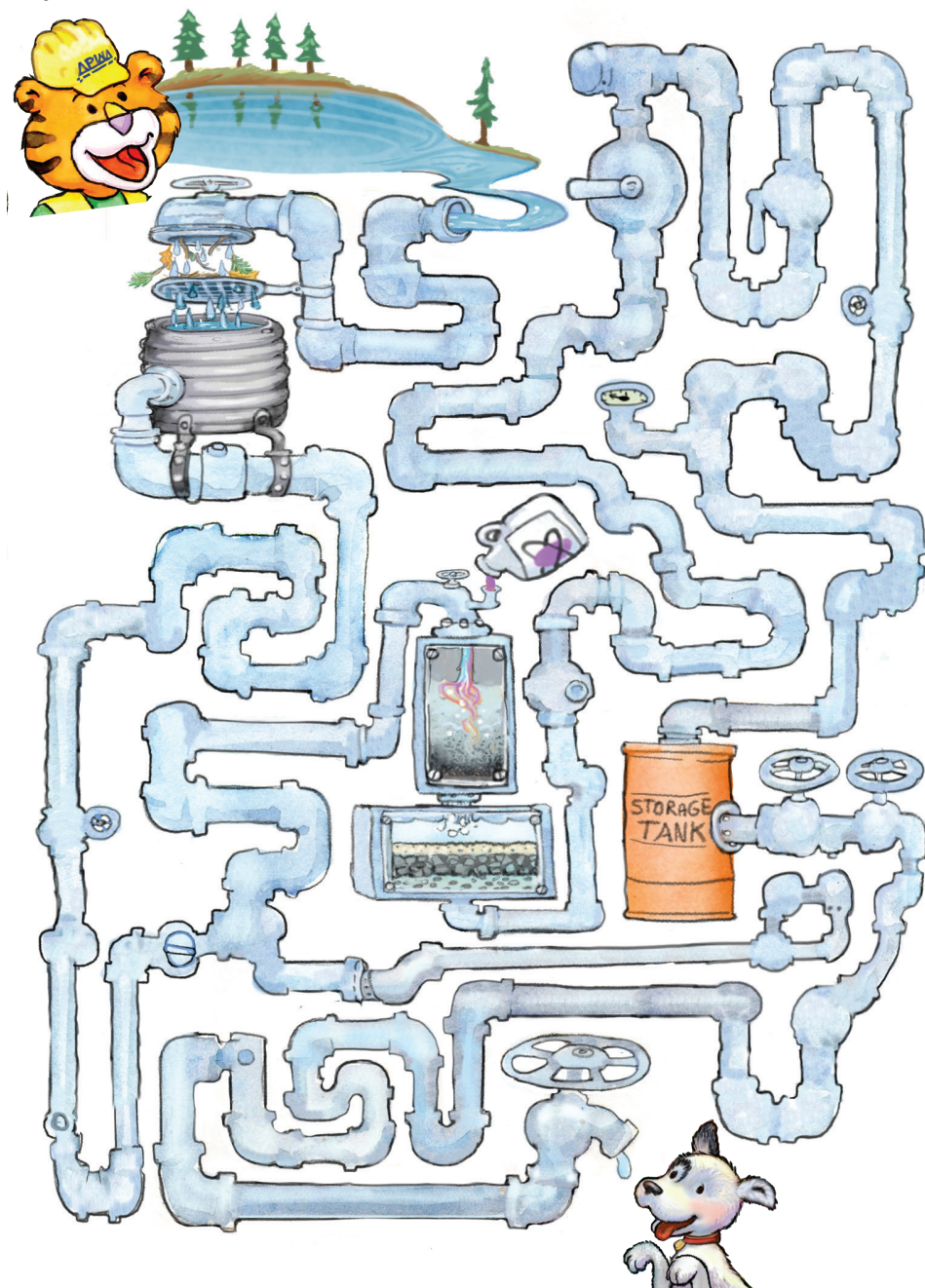
Using the iPads to photograph each curb ramp, a database was created for later use. Now public works employees can pull up any curb ramp in the city to see if it is in need of repair or improvement. Because of public works, citizens in wheelchairs will have an easier time traveling the Minneapolis sidewalks. 🐾



Help Jessica get to school by using the sidewalks, crosswalks, and curb ramps. When you're done, count all the curb ramps and see how many you can inventory!

Where Does Your Water Come from?

Follow this maze to discover how public works gets clean water right to your sink! 🐾



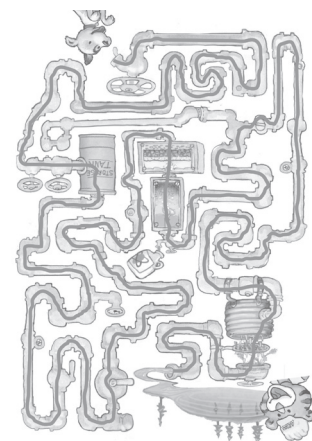
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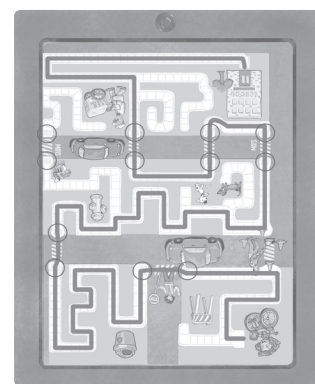
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City, MO 64108 or call 800-848-2792, ext. 5253. The American Public Works Association (APWA), an international educational and professional association, is committed to advancing and promoting outreach and public awareness of public works for school-aged children in all communities.

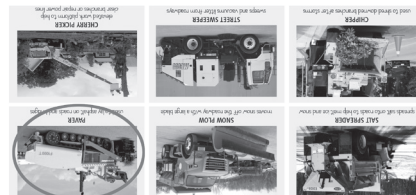
Special Thanks: The American Public Works Association (APWA) would like to thank Michael Anthony Steele, consultant, and Sheila Bailey, illustrator.



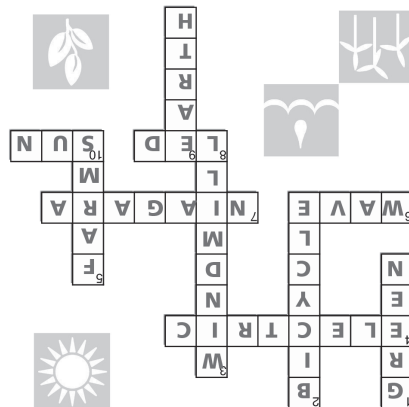
Where Does Your Clean Water Come From?



Public Works and Pads
12 curb ramps



Which One of These Does Not Belong?



Alternative Energy Crossword Puzzle

ANSWER KEY: